FIG. 1A

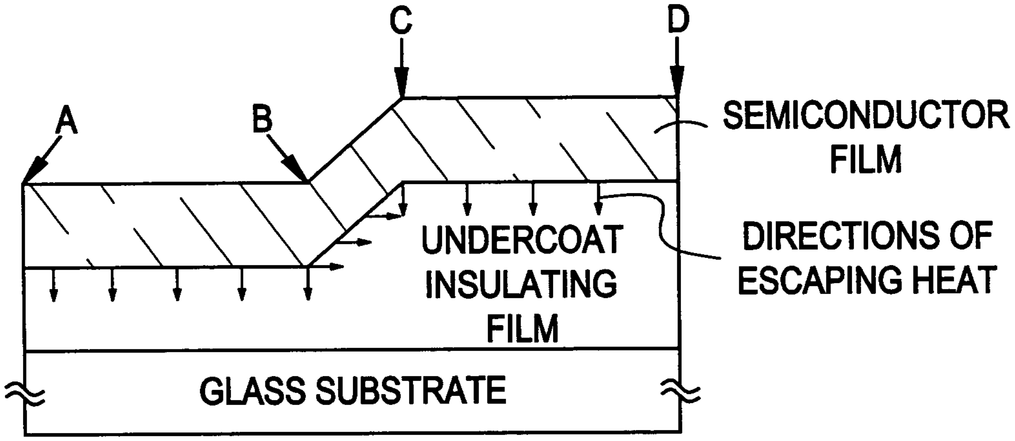


FIG. 1B

TEMPERATURE HISTORY AT RESPECTIVE POINTS OF FIG. 1A

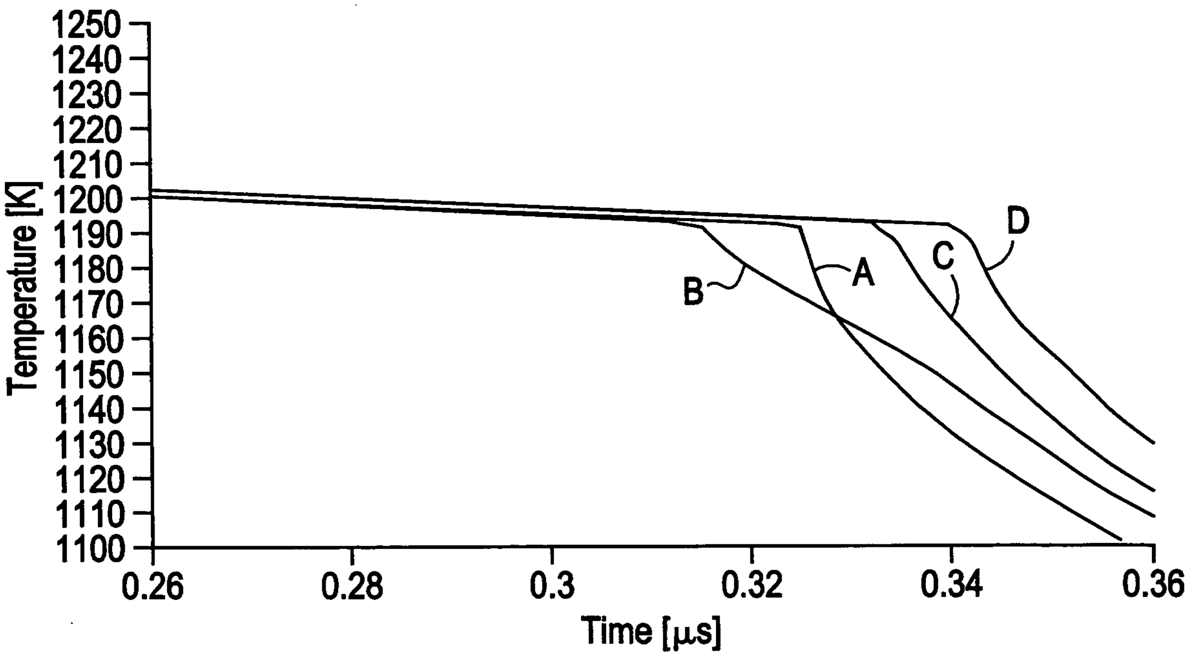


FIG. 2A

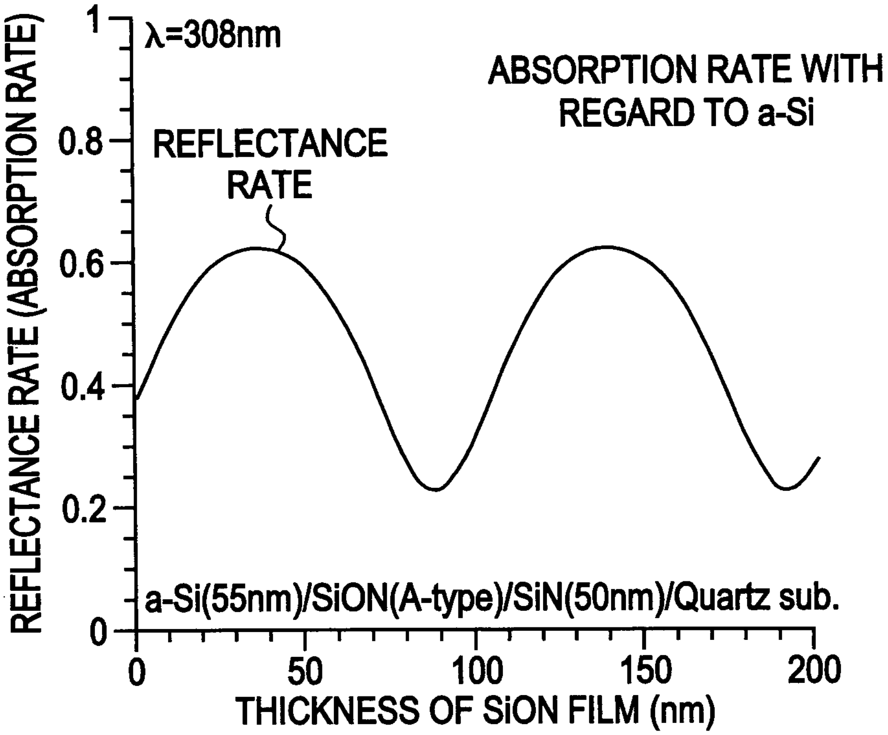

λ=308nm
ABSORPTION RATE WITH
REGARD TO a-Si
REFLECTANCE
RATE
a-Si(55nm)/SiON(A-type)/SiN(50nm)/Quartz sub.
REFLECTANCE RATE (ABSORPTION RATE)
0
0.2
0.4
0.6
0.8
1
0
50
100
150
200
THICKNESS OF SiON FILM (nm)

FIG. 2B

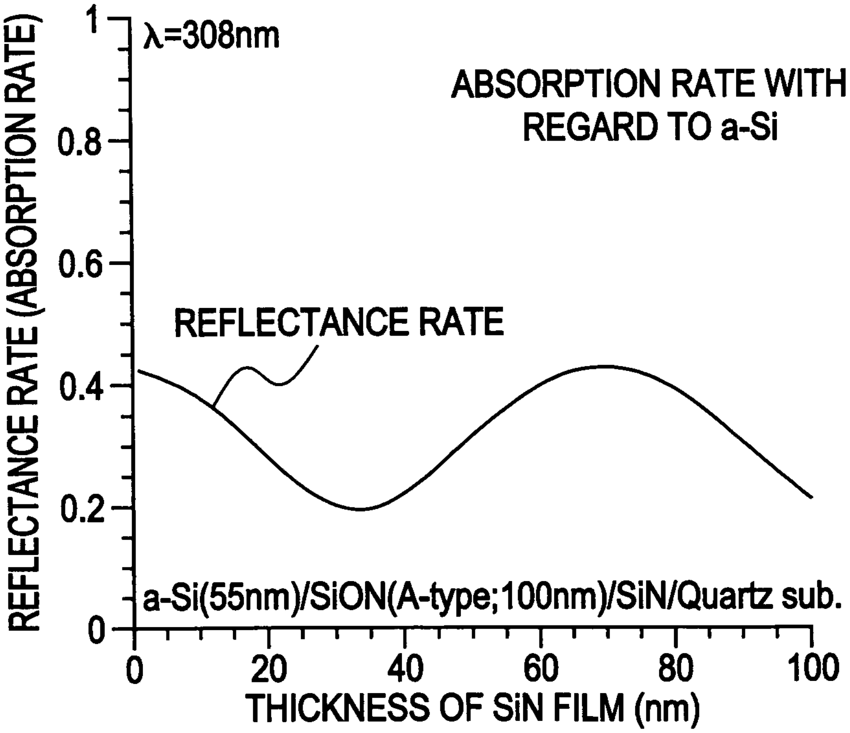

λ=308nm
ABSORPTION RATE WITH
REGARD TO a-Si
REFLECTANCE RATE
a-Si(55nm)/SiON(A-type;100nm)/SiN/Quartz sub.
REFLECTANCE RATE (ABSORPTION RATE)
0
0.2
0.4
0.6
0.8
1
0
20
40
60
80
100
THICKNESS OF SiN FILM (nm)

FIG. 3A

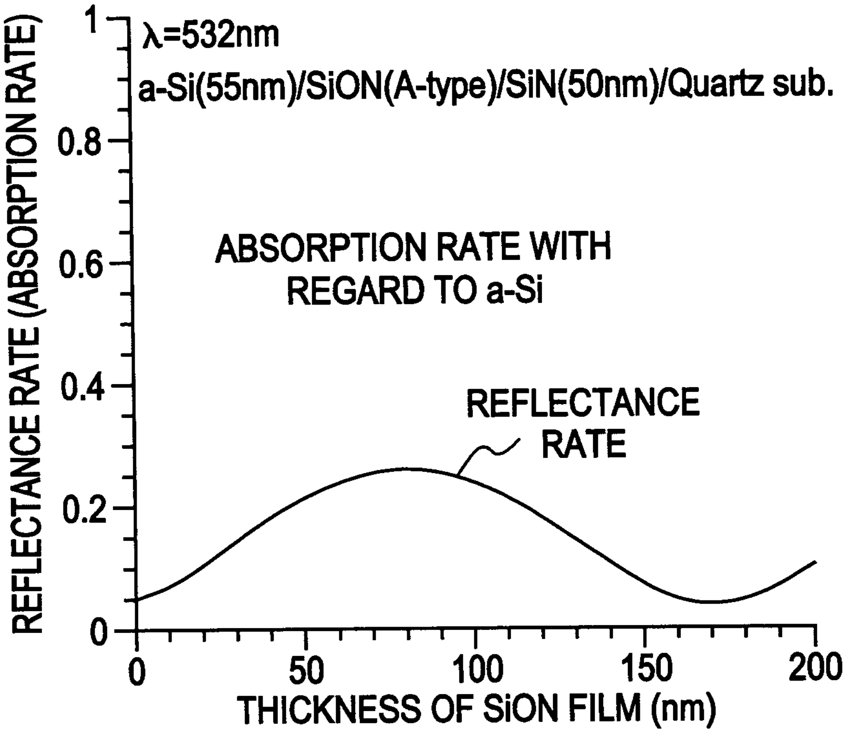

λ=532nm
a-Si(55nm)/SiON(A-type)/SiN(50nm)/Quartz sub.
REFLECTANCE RATE (ABSORPTION RATE)
1
0.8
0.6
0.4
0.2
0
ABSORPTION RATE WITH REGARD TO a-Si
REFLECTANCE RATE
0
50
100
150
200
THICKNESS OF SiON FILM (nm)

FIG. 3B

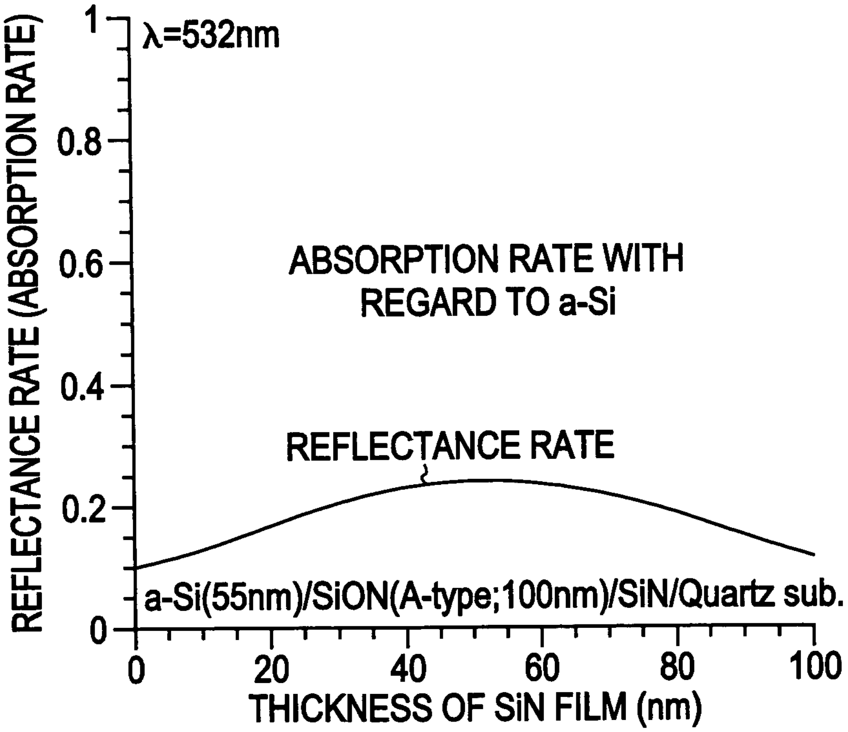

λ=532nm
REFLECTANCE RATE (ABSORPTION RATE)
1
0.8
0.6
0.4
0.2
0
ABSORPTION RATE WITH REGARD TO a-Si
REFLECTANCE RATE
a-Si(55nm)/SiON(A-type;100nm)/SiN/Quartz sub.
0
20
40
60
80
100
THICKNESS OF SiN FILM (nm)

FIG. 4A

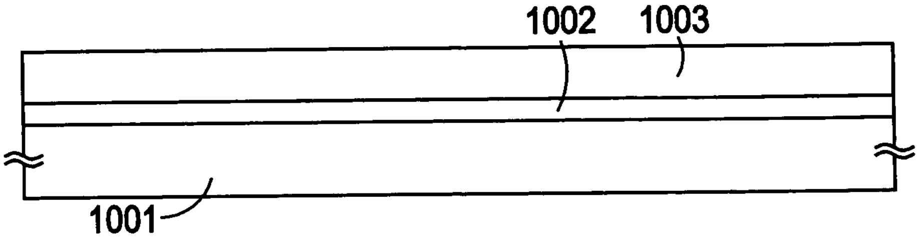


FIG. 4B

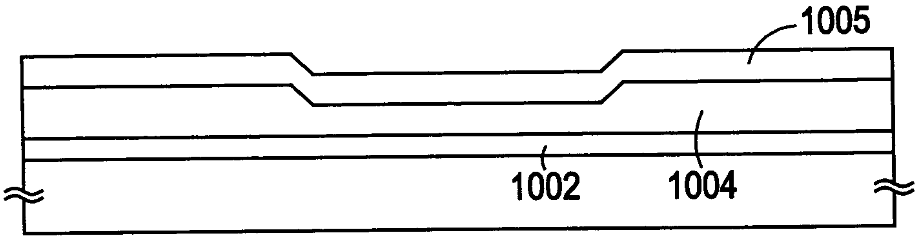


FIG. 4C

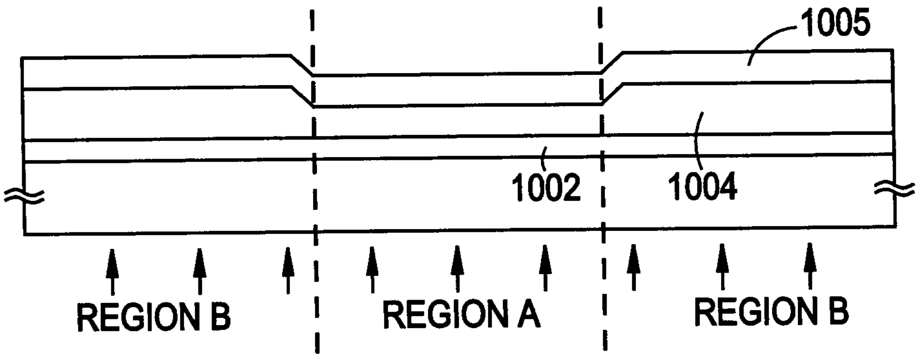


FIG. 4D

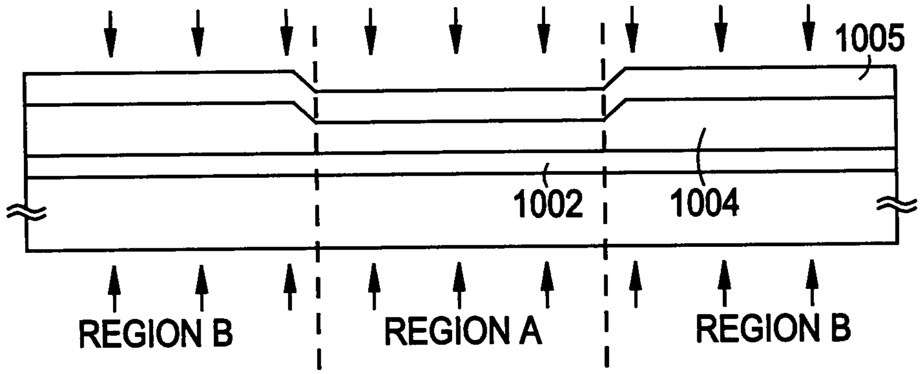


FIG. 4E

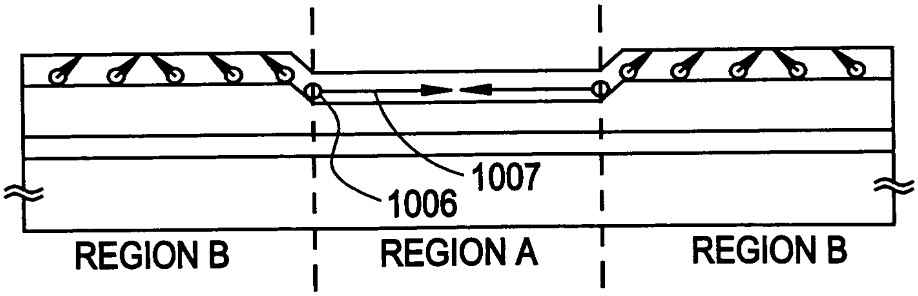


FIG. 5A

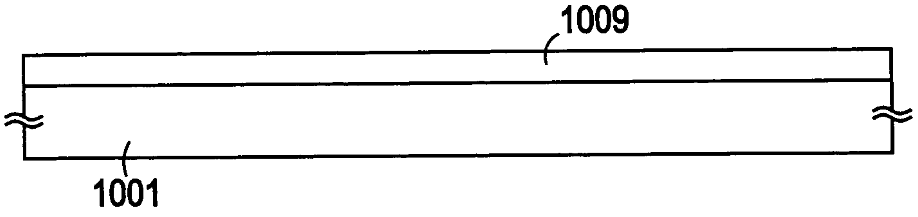


FIG. 5B

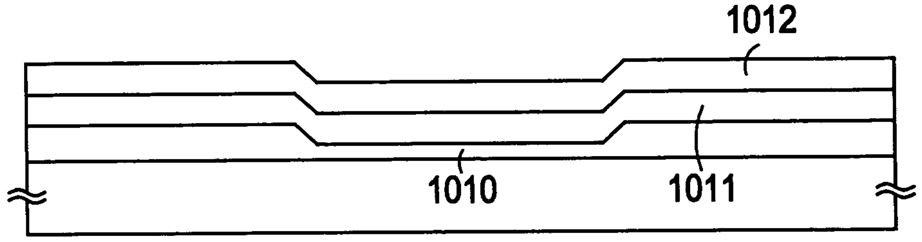


FIG. 5C

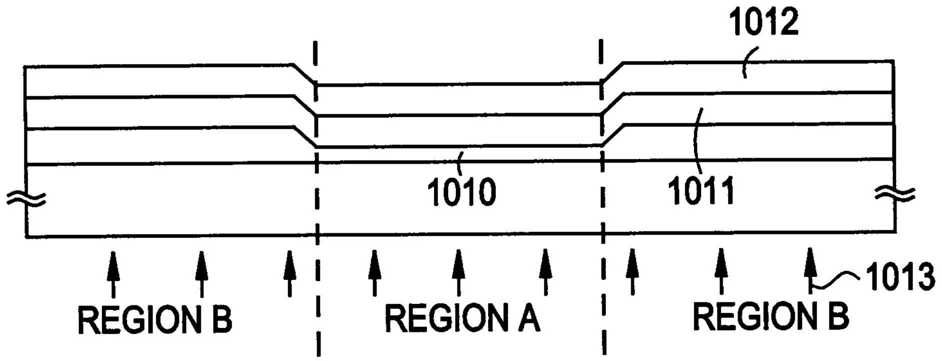


FIG. 5D

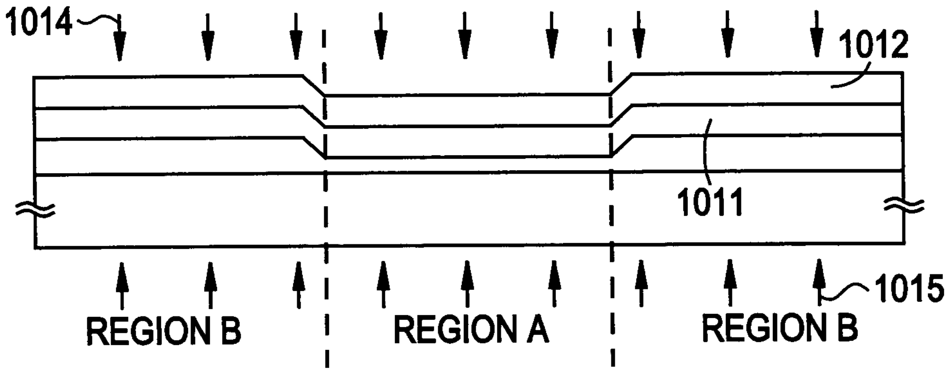


FIG. 5E

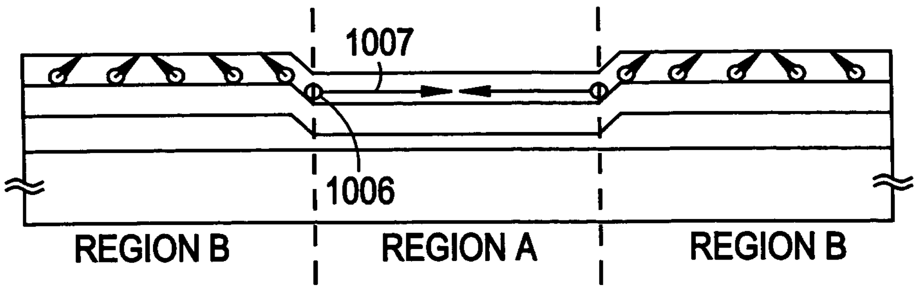


FIG. 6A

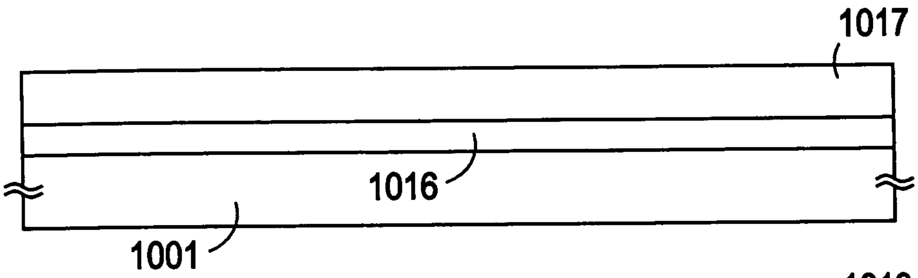


FIG. 6B

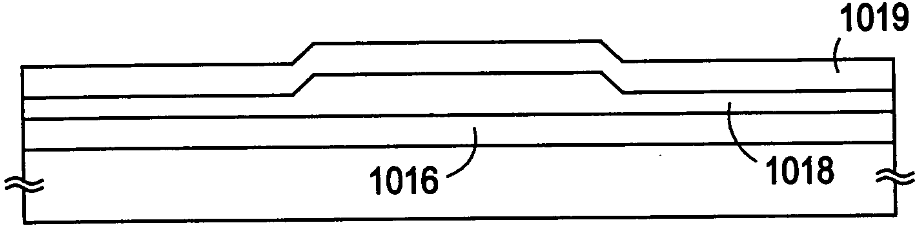


FIG. 6C

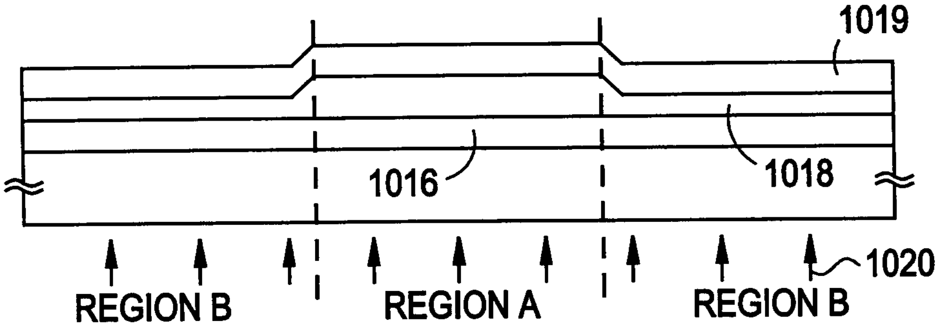


FIG. 6D

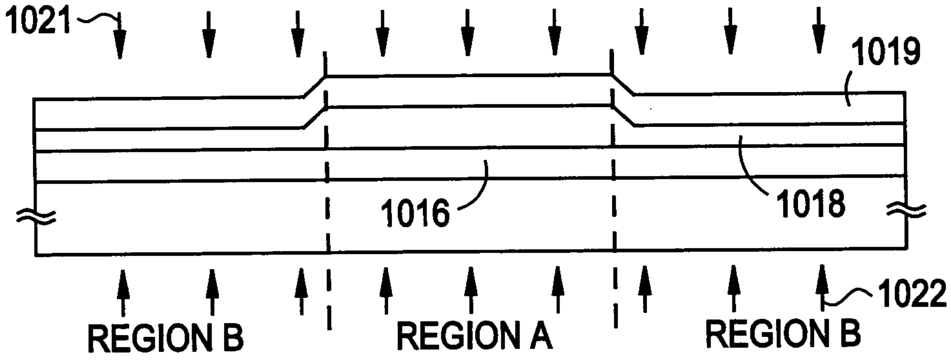


FIG. 6E

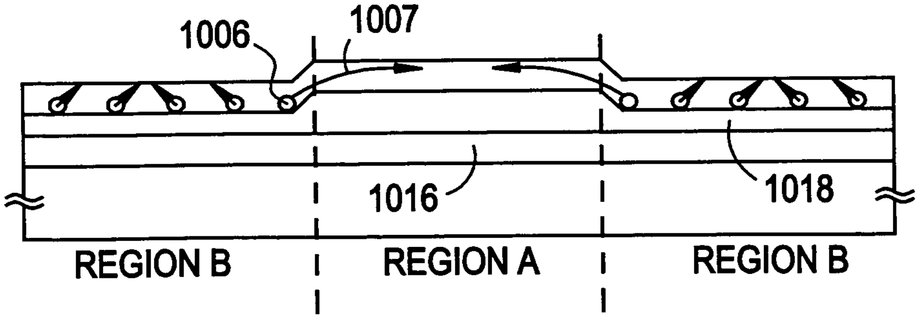


FIG. 7A

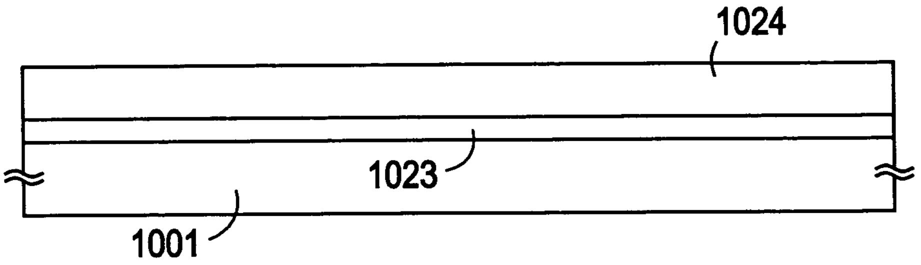


FIG. 7B

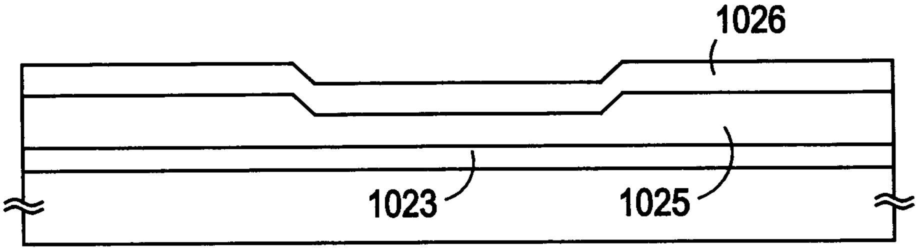


FIG. 7C

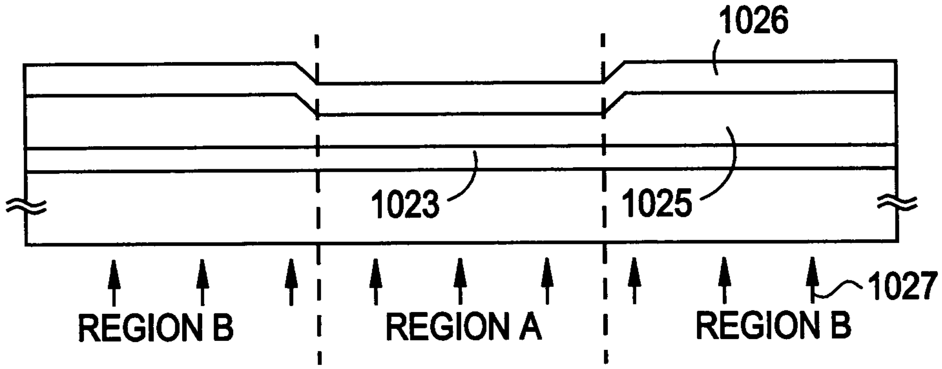


FIG. 7D

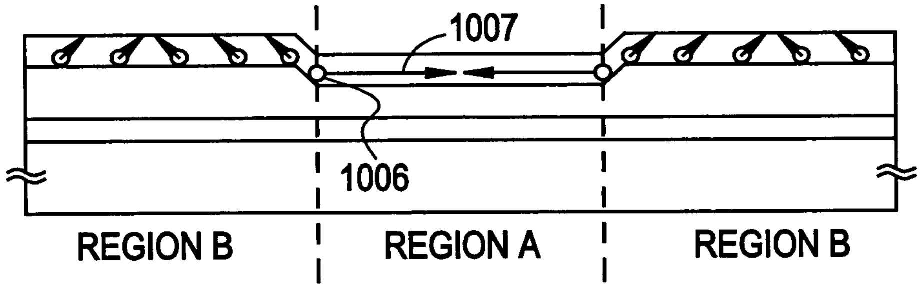
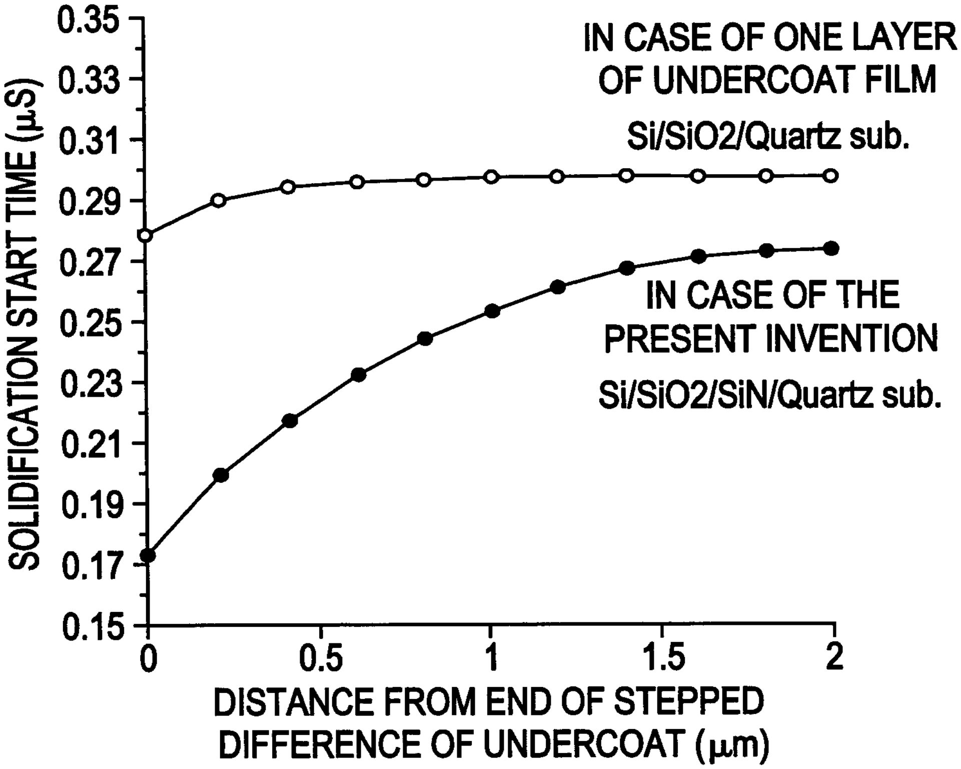


FIG. 8



SOLIDIFICATION START TIME (μS)
0.35
0.33
0.31
0.29
0.27
0.25
0.23
0.21
0.19
0.17
0.15
0
0.5
1
1.5
2
DISTANCE FROM END OF STEPPED DIFFERENCE OF UNDERCOAT (μm)
IN CASE OF ONE LAYER OF UNDERCOAT FILM
Si/SiO2/Quartz sub.
IN CASE OF THE PRESENT INVENTION
Si/SiO2/SiN/Quartz sub.

FIG. 9A

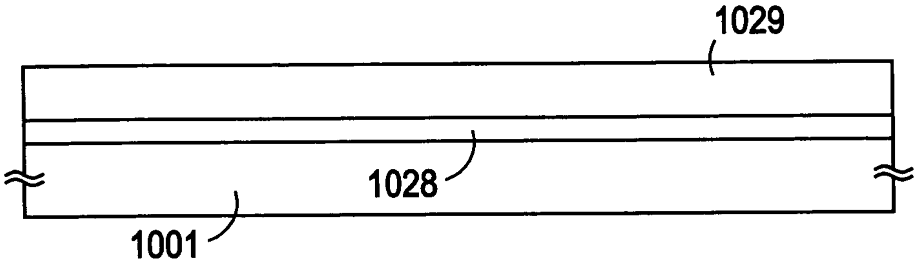


FIG. 9B

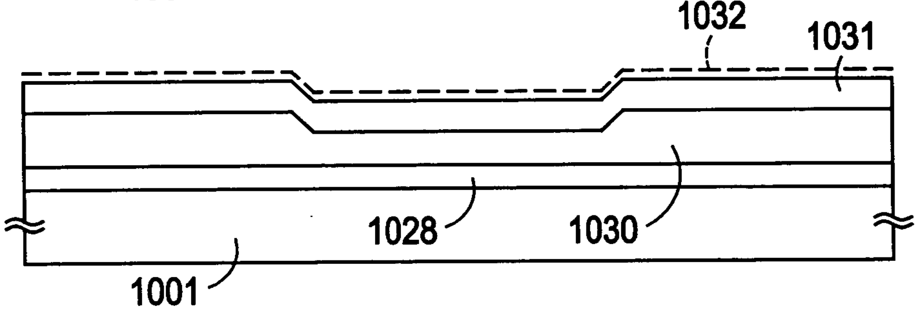


FIG. 9C

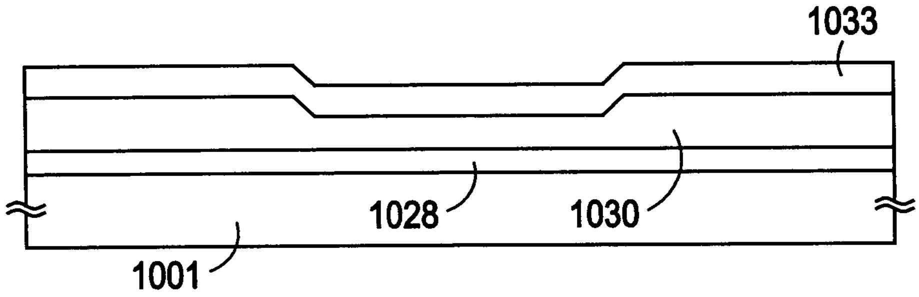


FIG. 9D

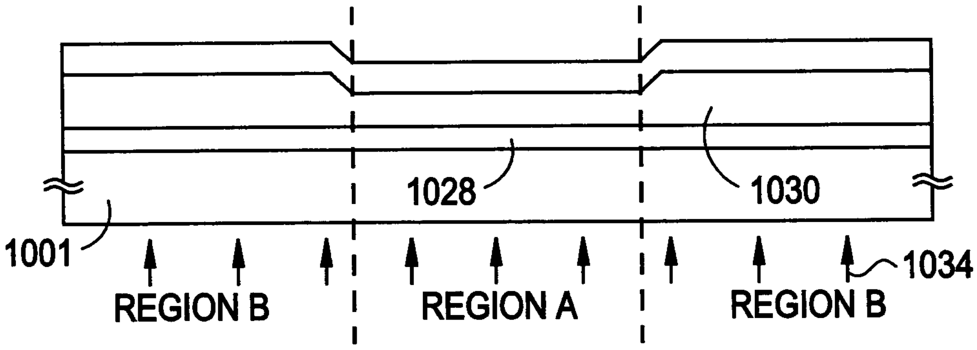


FIG. 9E

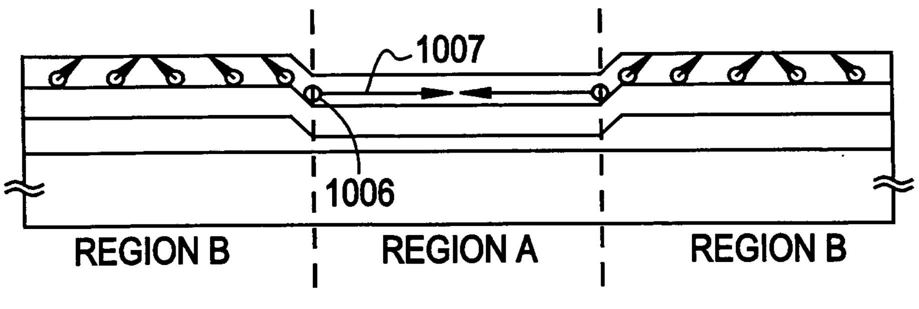


FIG. 10A

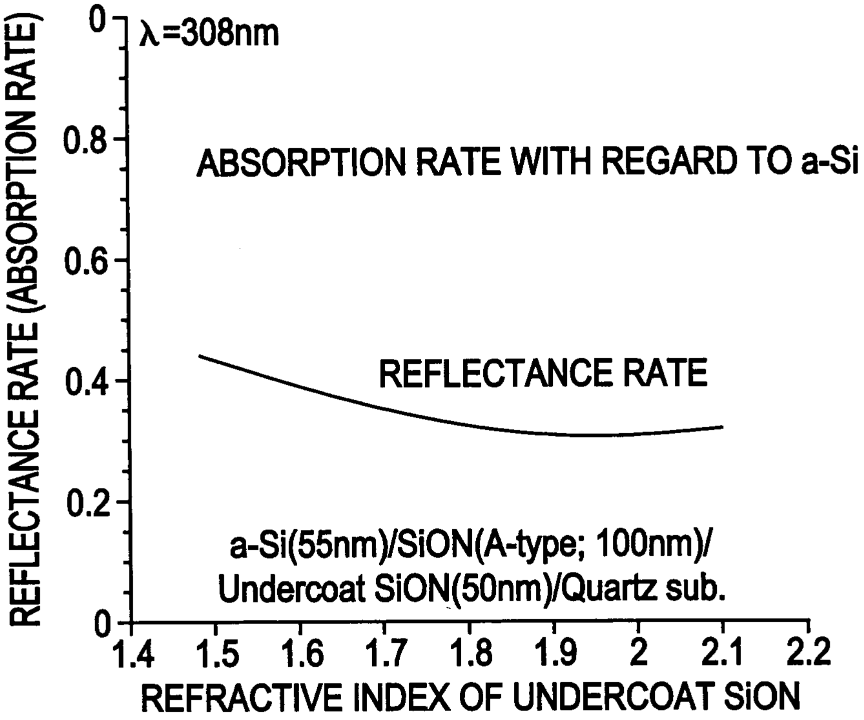


FIG. 10B

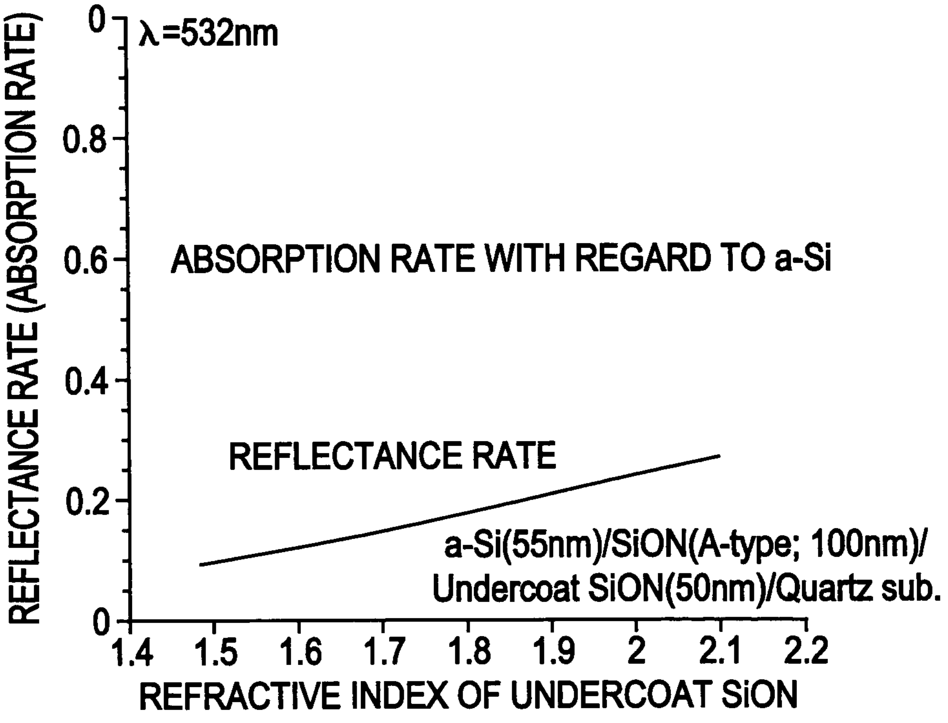


FIG. 11A

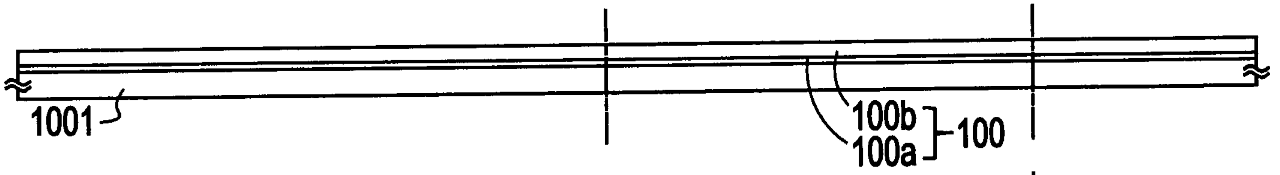


FIG. 11B

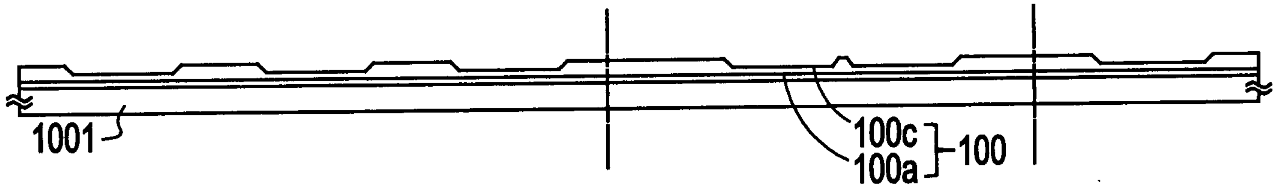


FIG. 11C

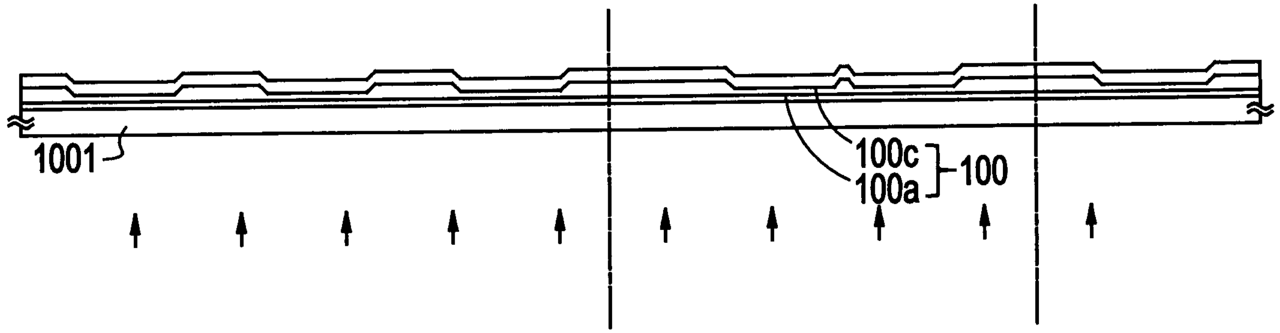


FIG. 11D

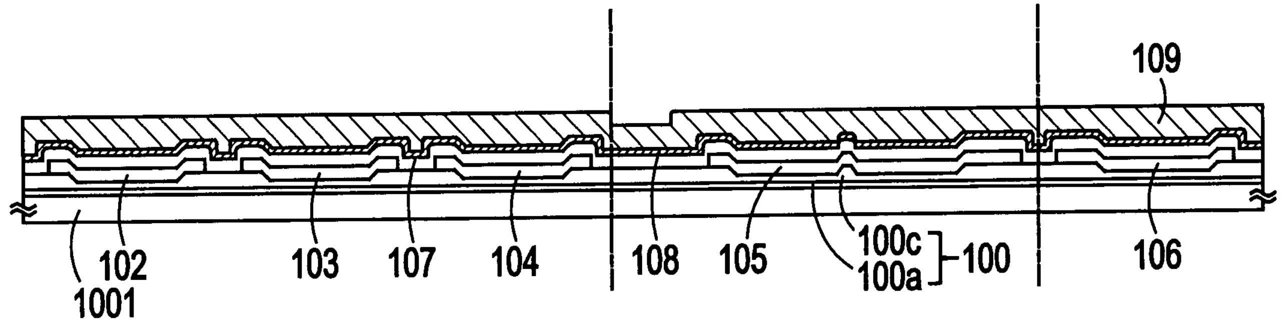


FIG. 12A

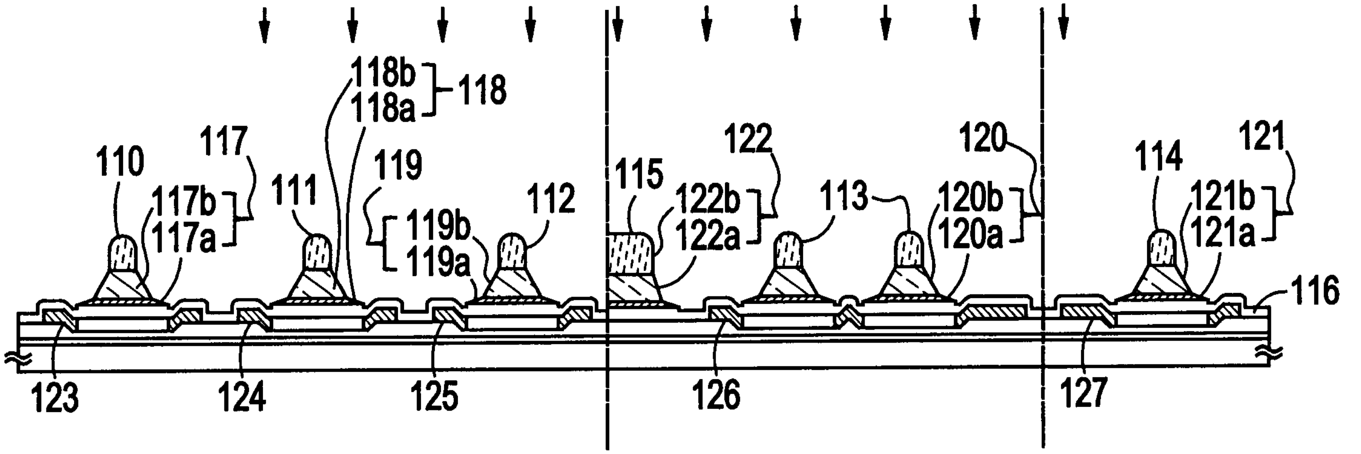


FIG. 12B

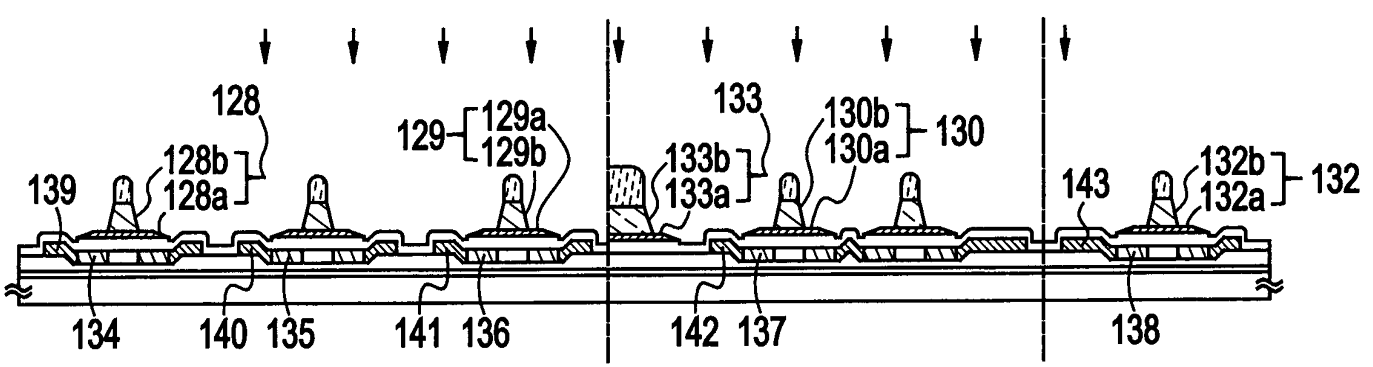


FIG. 12C

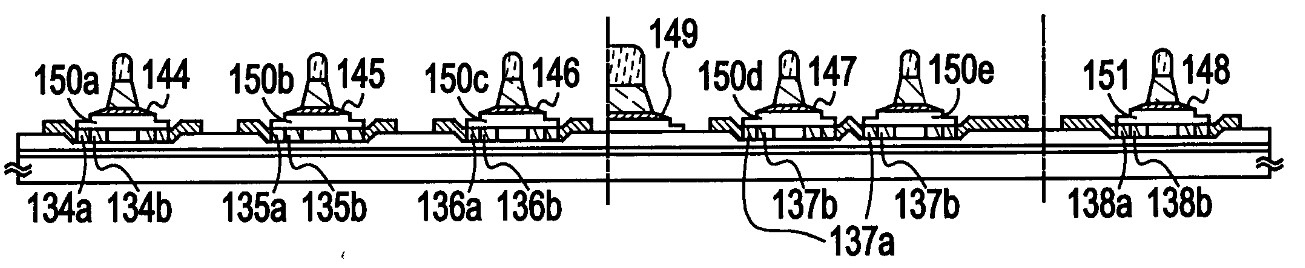


FIG. 13A

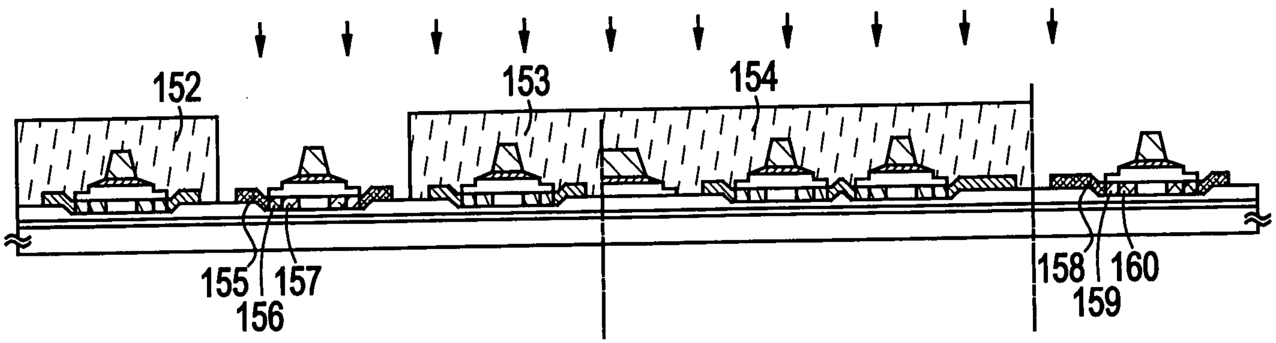


FIG. 13B

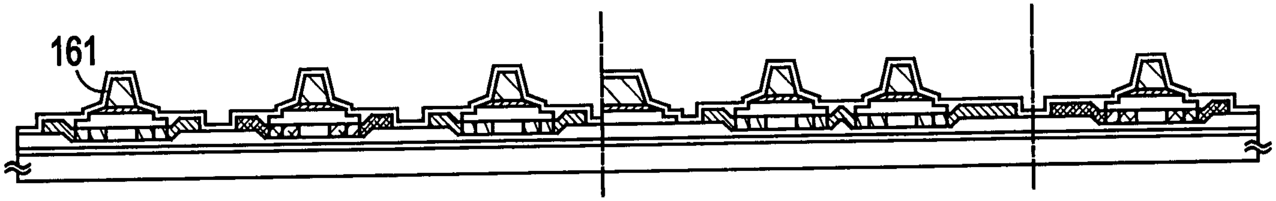


FIG. 13C

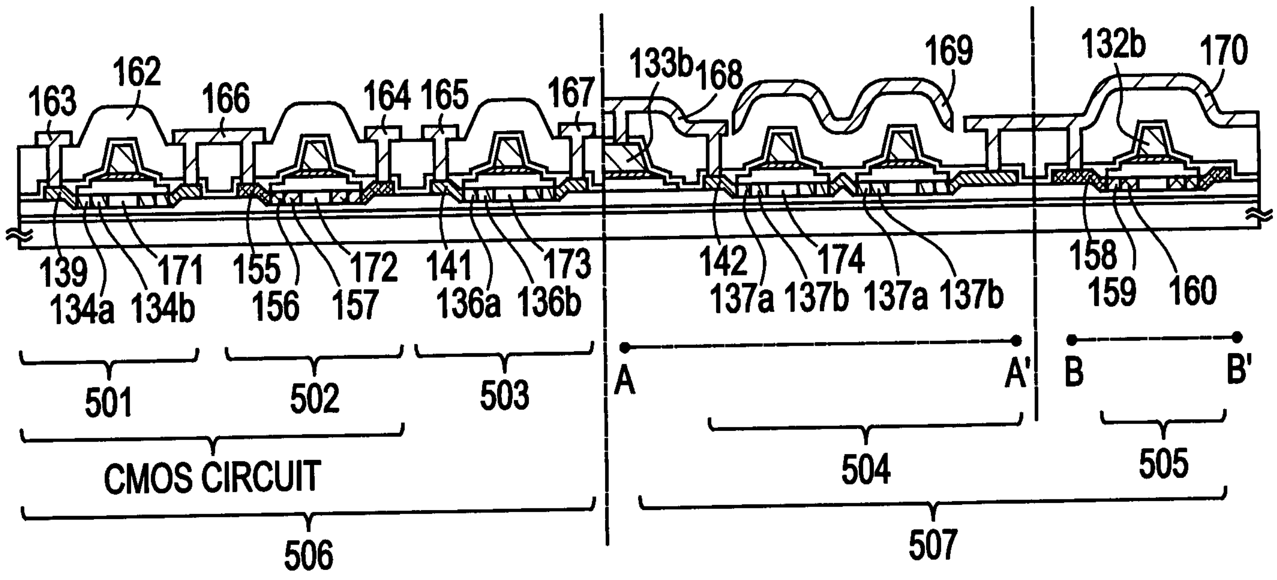


FIG. 14

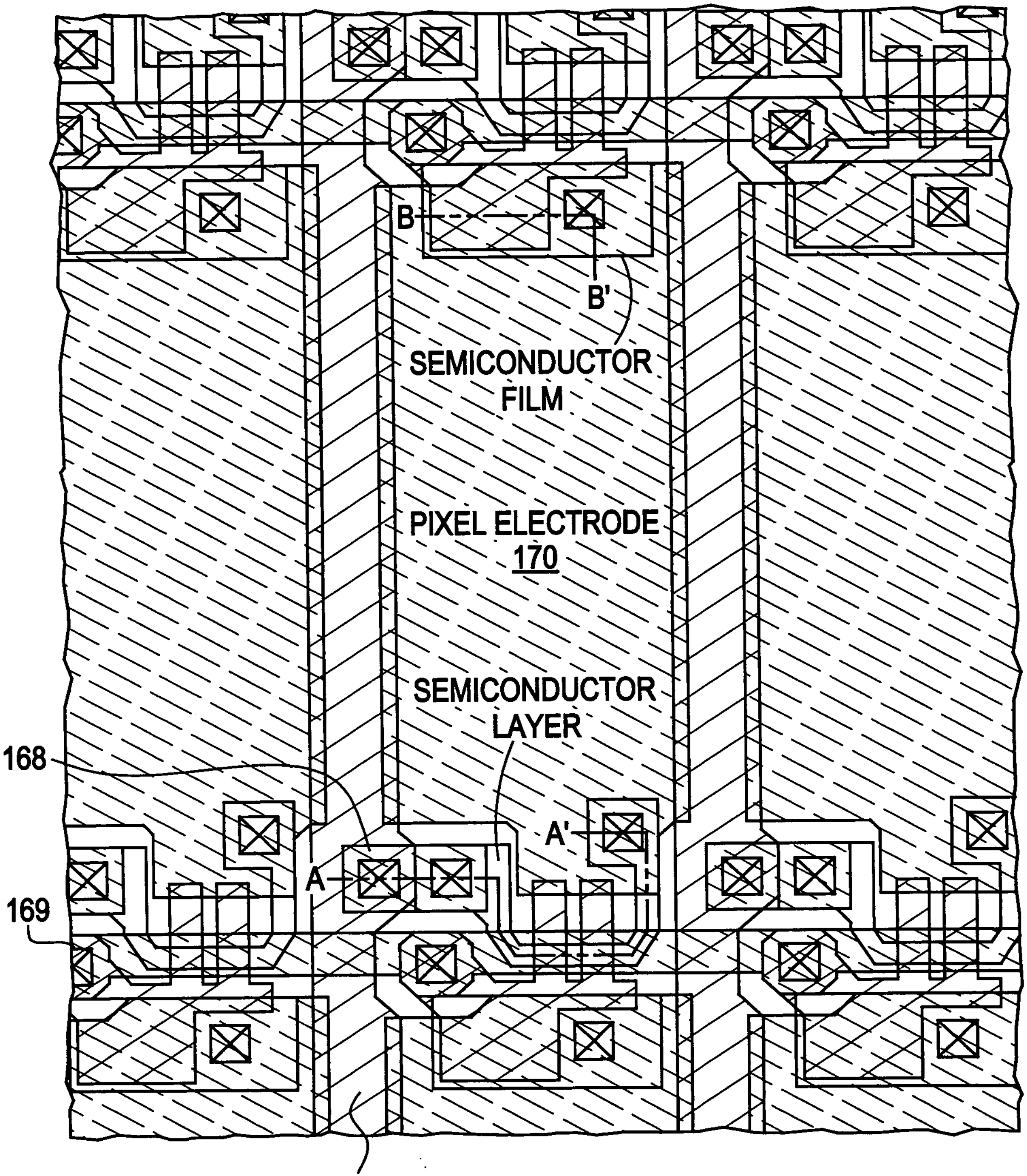

B
B'
SEMICONDUCTOR FILM
PIXEL ELECTRODE 170
SEMICONDUCTOR LAYER
168
A
A'
169
133b, 149

FIG. 15

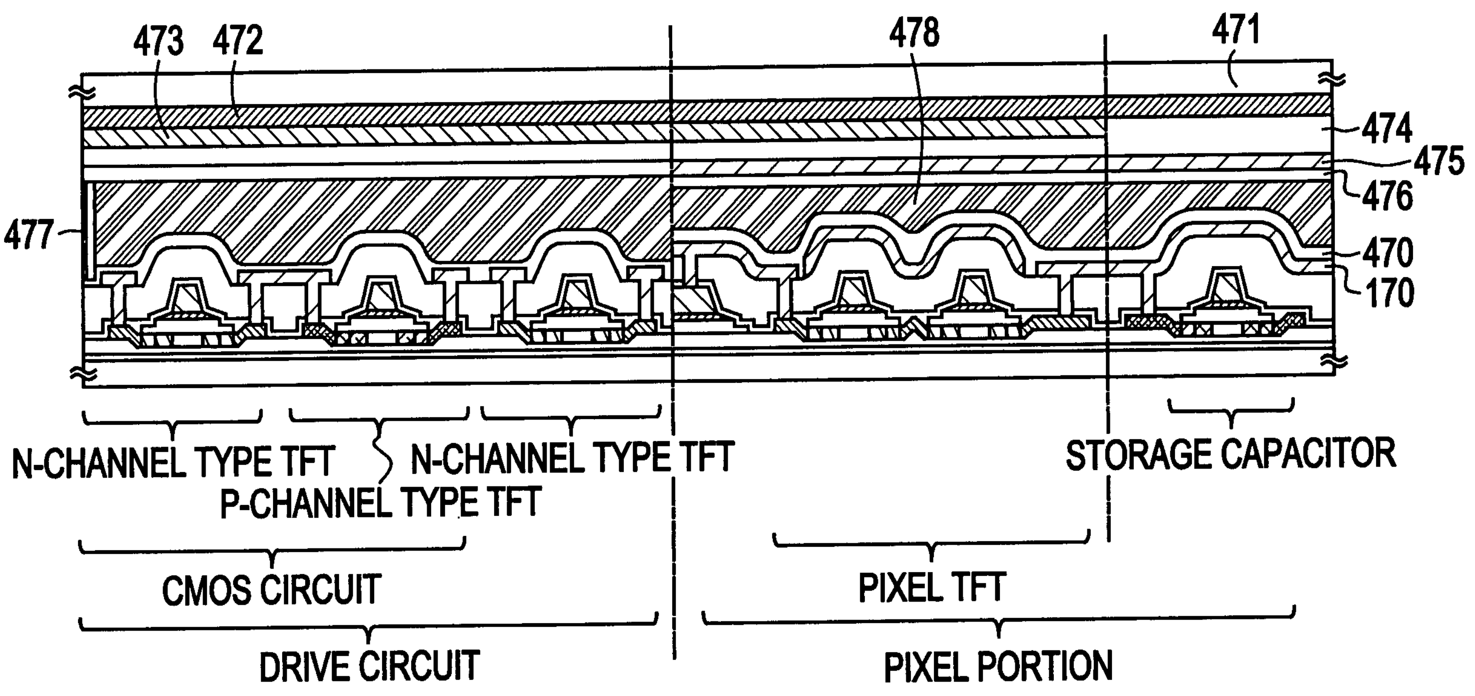

473
472
478
471
474
475
476
477
470
170
N-CHANNEL TYPE TFT
N-CHANNEL TYPE TFT
P-CHANNEL TYPE TFT
STORAGE CAPACITOR
CMOS CIRCUIT
PIXEL TFT
DRIVE CIRCUIT
PIXEL PORTION

FIG. 16A

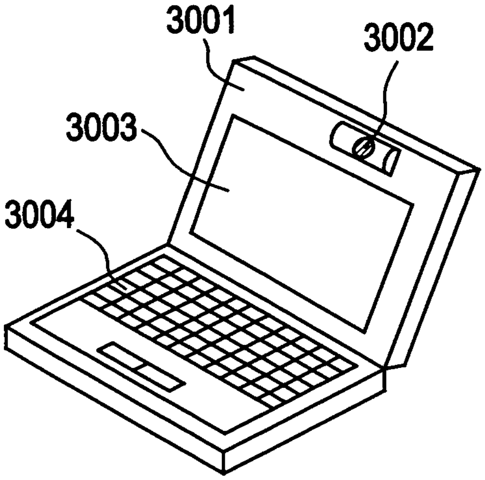


FIG. 16B

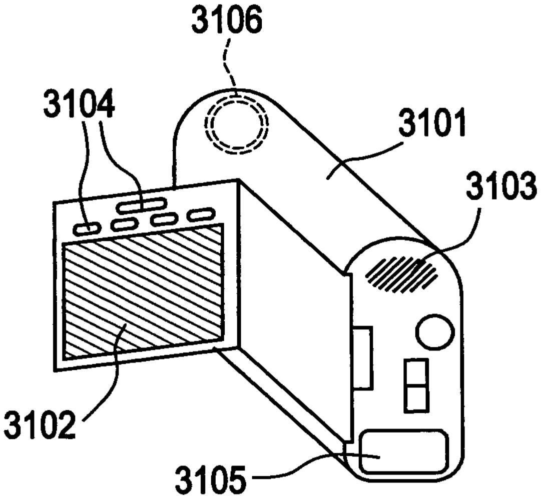


FIG. 16C

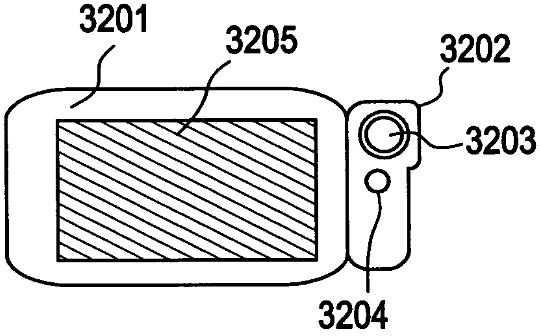


FIG. 16D

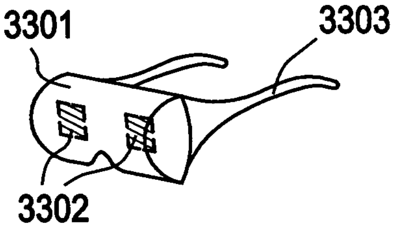


FIG. 16E

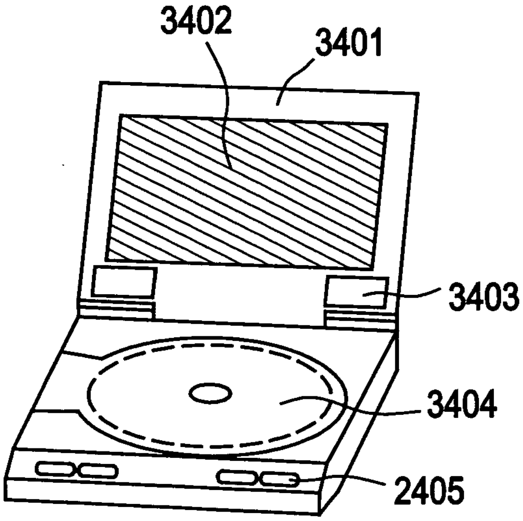


FIG. 16F

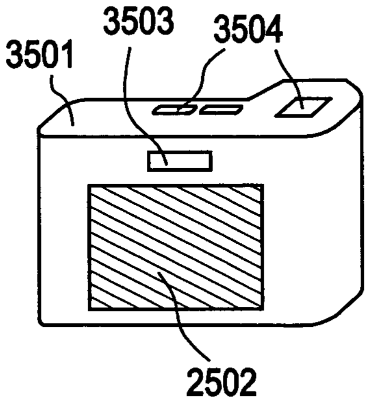


FIG. 17A

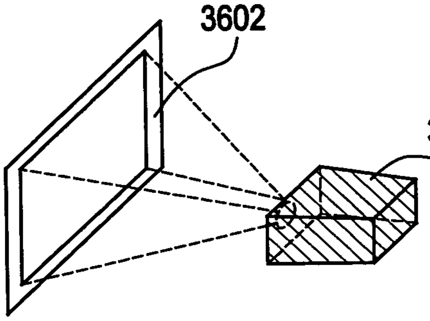


FIG. 17B

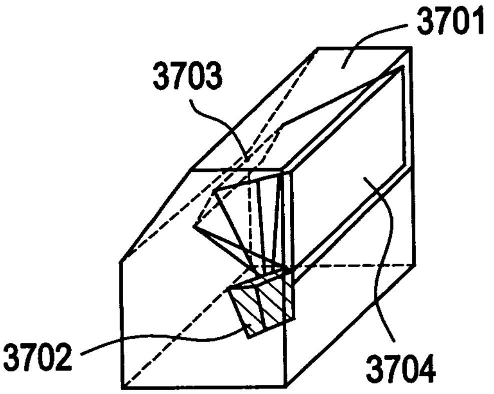


FIG. 17C

Projection Apparatus (Three Plates Types)

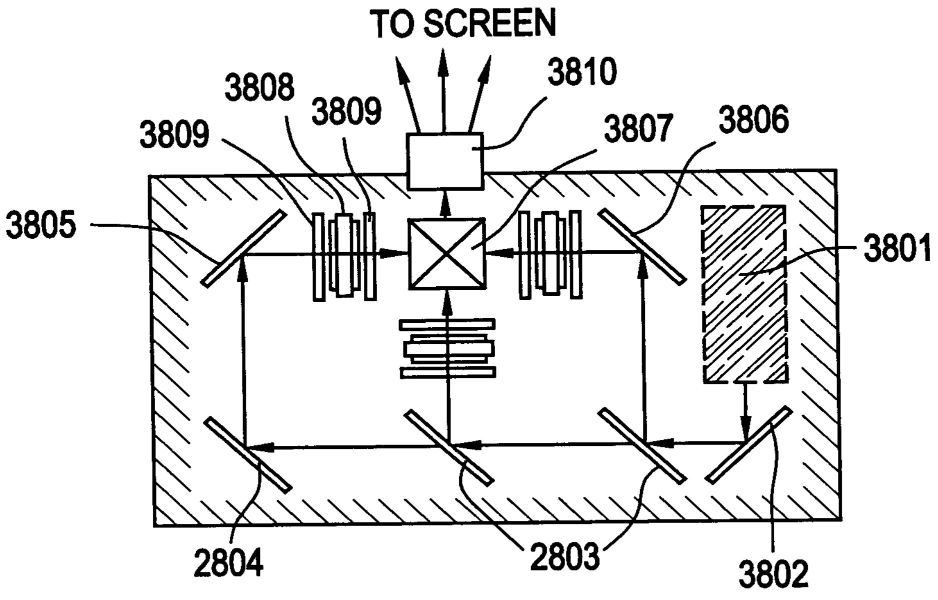


FIG. 17D

Light Source Optical System

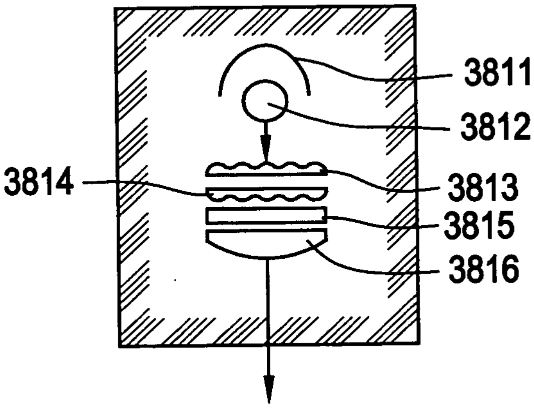


FIG. 18A

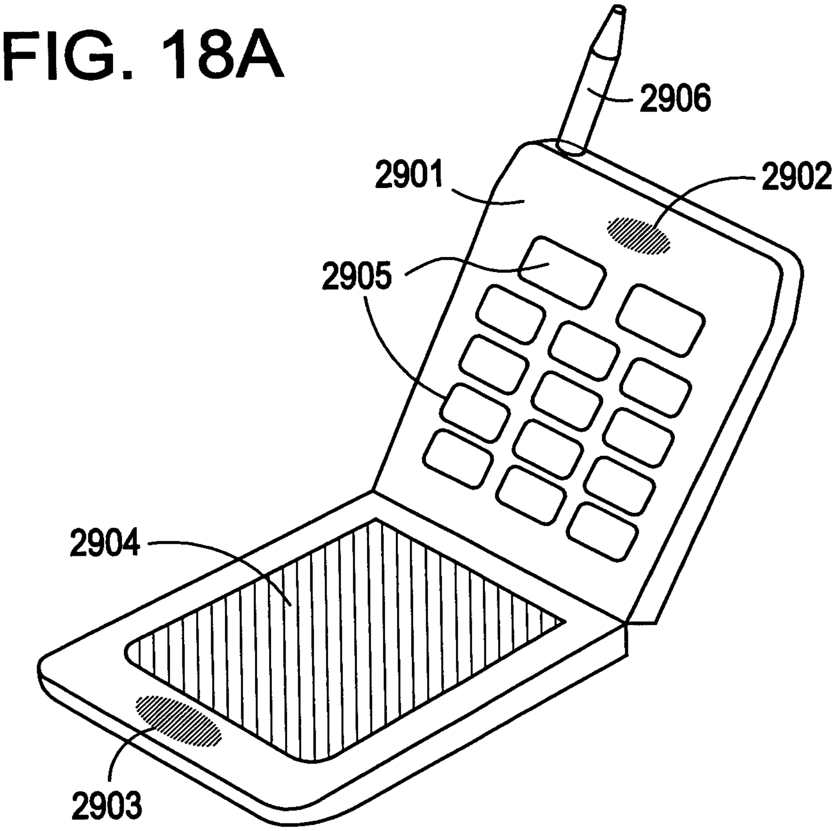


FIG. 18B

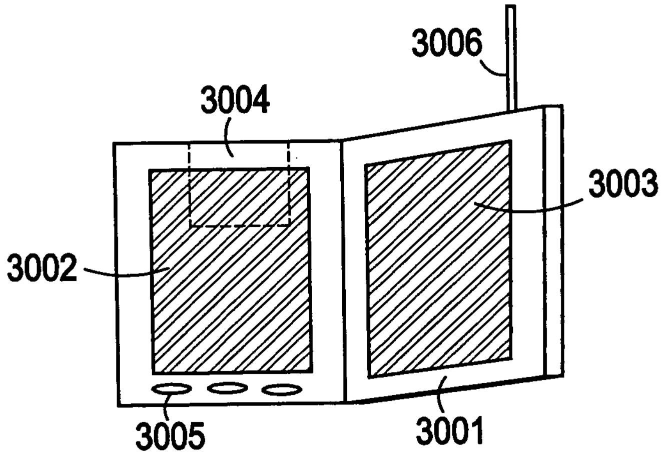


FIG. 18C